

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G01B7/34 G01N27/00 G01N33/543 H01J37/317 G11B9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G01B G01N H01J G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WILSON D L ET AL: "Morphological modeling of atomic force microscopy imaging including nanostructure probes and fibrinogen molecules"</p> <p>PHYSICS AND CHEMISTRY OF SEMICONDUCTOR INTERFACES. 23RD ANNUAL CONFERENCE, LA JOLLA, CA, USA, 21-25 JAN. 1996, vol. 14, no. 4, ISSN 0734-211X, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B (MICROELECTRONICS AND NANOMETER STRUCTURES), JULY-AUG. 1996, AIP FOR AMERICAN VACUUM SOC, USA, pages 2407-2416, XP002050872</p> <p>See especially the abstract and page 2410, first paragraph.</p> <p>see the whole document</p> <p style="text-align: center;">--- -/-</p>	1-13, 32-46, 65,66, 80-83



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"A" document member of the same patent family

Date of the actual completion of the international search

19 December 1997

Date of mailing of the international search report

14/01/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3018

Authorized officer

Brock, T

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 483 579 A (IBM) 6 May 1992 see the whole document ---	1-13, 32-46, 65,66, 80-83
A	THESS A ET AL: "CRYSTALLINE ROPES OF METALLIC CARBON NANOTUBES" SCIENCE, vol. 273, no. 5274, 26 July 1996, pages 483-487, XP000610196 ---	1,12,13, 15-17, 26-31, 62,64
P,X	WO 96 38705 A (CALIFORNIA INST OF TECHN) 5 December 1996	1-13, 31-36, 38,39, 44-49, 53-58, 60,61, 65,66, 69,79-83 49-52,59
Y	see the whole document ---	49-52,59
Y	US 5 126 574 A (GALLAGHER ALAN C) 30 June 1992 cited in the application	
A	see the whole document ---	1,81-83
A	EP 0 511 662 A (MATSUSHITA ELECTRIC IND CO LTD) 4 November 1992 see the whole document ---	1,33,34, 39, 46-50, 53,54, 57,58
A	EP 0 591 595 A (IBM) 13 April 1994 see the whole document ---	1,11, 18-20, 49,51, 55-57, 80-83
A	WO 96 18059 A (HYPERION CATALYSIS INT) 13 June 1996 see page 1, line 1 - page 14, line 11 ---	1,10-13, 23-25, 49,53,54
A	SAITO Y ET AL: "Carbon nanocapsules encaging metals and carbides" JOURNAL OF THE PHYSICS AND CHEMISTRY OF SOLIDS, DEC. 1993, UK, vol. 54, no. 12, ISSN 0022-3697, pages 1849-1860, XP002050873 cited in the application ---	1,11-22
	--- -/--	

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DAI H ET AL: "Single-wall nanotubes produced by metal-catalyzed disproportionation of carbon monoxide" CHEMICAL PHYSICS LETTERS, 27 SEPT. 1996, ELSEVIER, NETHERLANDS, vol. 260, no. 3-4, ISSN 0009-2614, pages 471-475, XP002050874 cited in the application	1, 11-13, 15-17, 23-28
A	WO 95 26371 A (PATRIQUE LTD ;DYATLOV VALERY A (RU); MALEEV VIKTOR (RU)) 5 October 1995 see abstract See especially page 30, lines 8-12 see page 9, line 25 - page 37, line 2	1, 65, 71-73, 75, 78
A	DATABASE INSPEC INSTITUTE OF ELECTRICAL ENGINEERS, STEVENAGE, GB Inspec No. 5119481, FISHBINE B H ET AL: "Graphene nanotubule cold field emission electron sources" XP002050875 see abstract & NOVEL FORMS OF CARBON II SYMPOSIUM, NOVEL FORMS OF CARBON II SYMPOSIUM, SAN FRANCISCO, CA, USA, 4-8 APRIL 1994, 1994, PITTSBURGH, PA, USA, MATER. RES. SOC, USA, pages 319-324,	1, 62

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0483579 A	06-05-92	DE 69115847 D	08-02-96
		DE 69115847 T	11-07-96
		JP 2093298 C	18-09-96
		JP 4233406 A	21-08-92
		JP 8001382 B	10-01-96
		US 5171992 A	15-12-92
WO 9638705 A	05-12-96	AU 5857596 A	18-12-96
US 5126574 A	30-06-92	US 5015323 A	14-05-91
		US 5294465 A	15-03-94
EP 0511662 A	04-11-92	JP 2561396 B	04-12-96
		JP 4330281 A	18-11-92
		DE 69212062 D	14-08-96
		DE 69212062 T	28-11-96
		JP 2653597 B	17-09-97
		JP 5093623 A	16-04-93
		US 5363697 A	15-11-94
EP 0591595 A	13-04-94	US 5547774 A	20-08-96
WO 9618059 A	13-06-96	AU 4598096 A	26-06-96
		CA 2207282 A	13-06-96
		EP 0796403 A	24-09-97
WO 9526371 A	05-10-95	AU 6289794 A	17-10-95

J1046 U.S. PTO
10/027726
12/21/01

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						